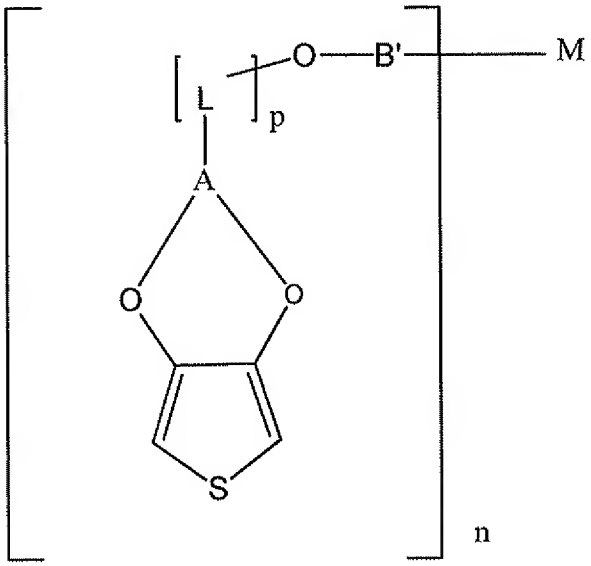
AMENDMENTS TO THE CLAIMS

Claims 1-45 (Canceled).

46. (Currently Amended) A 3,4-Alkylenedioxythiophenes of the formula (I),



(I)

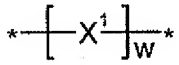
wherein

A is a C_1 or C_3-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

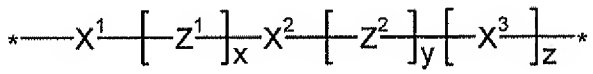
L is a methylene group,

p is 0 or an integer from 1 to 6,

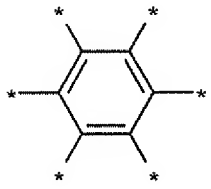
M is an n-functional group of the formula (II-a), (II-b) or (II-c-1) to (II-c-6),



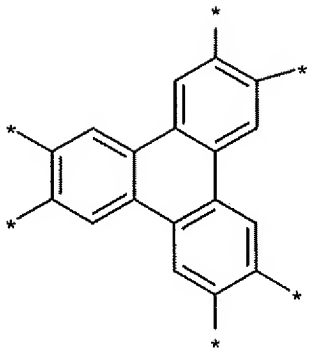
(II-a)



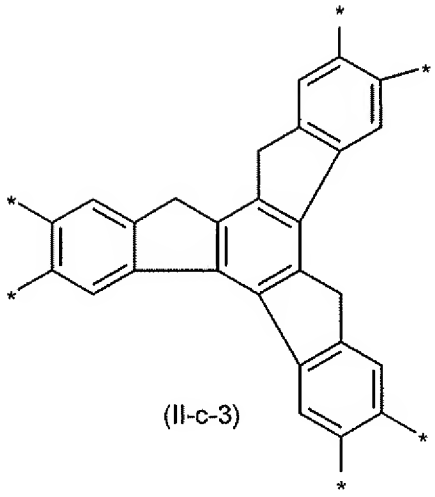
(II-b)



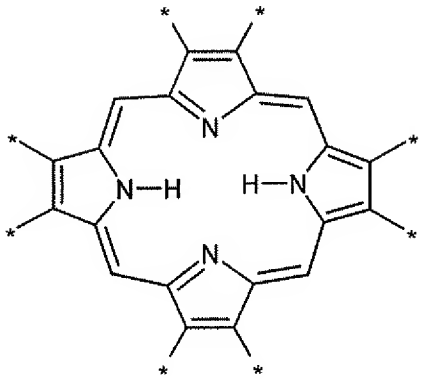
(II-c-1)



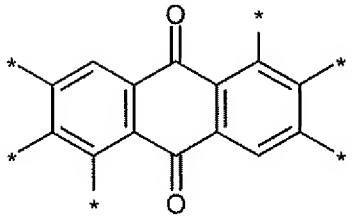
(II-c-2)



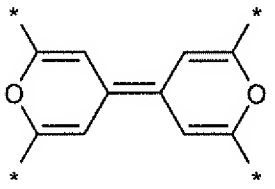
(II-c-3)



(II-c-4)



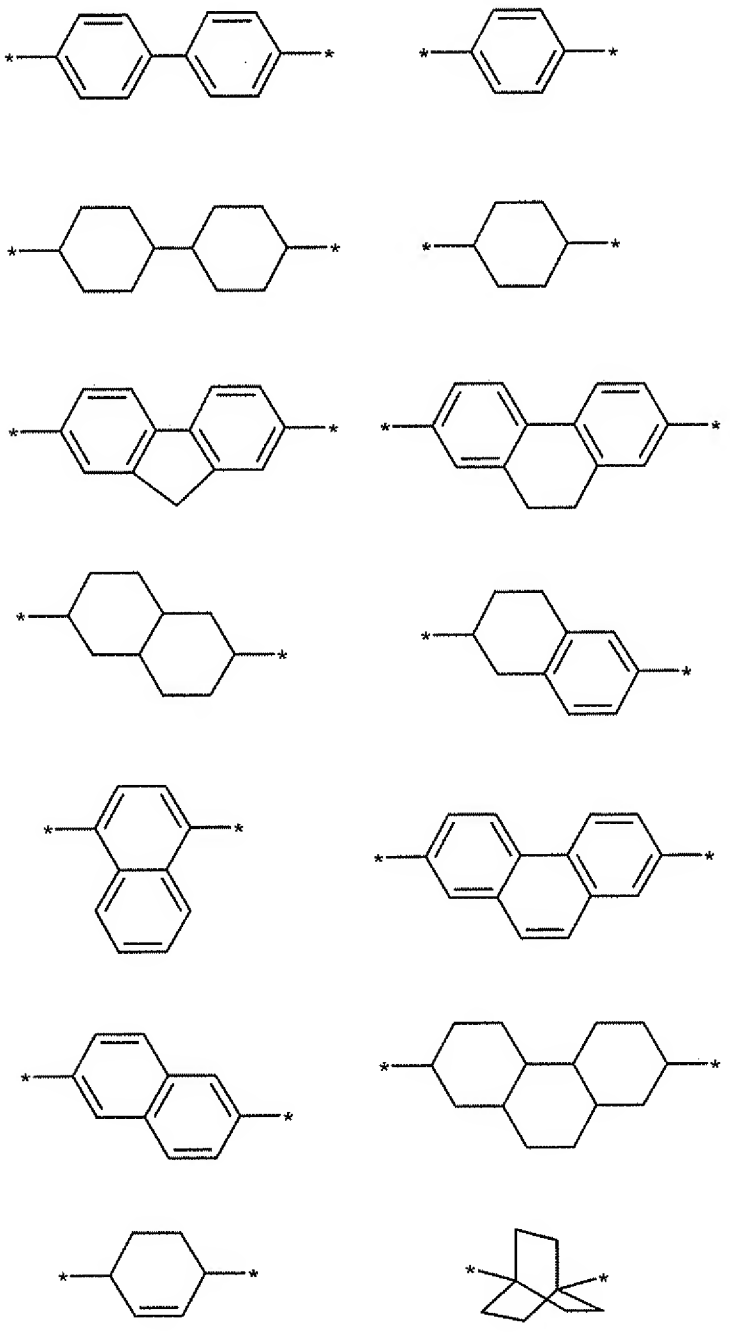
(II-c-5)

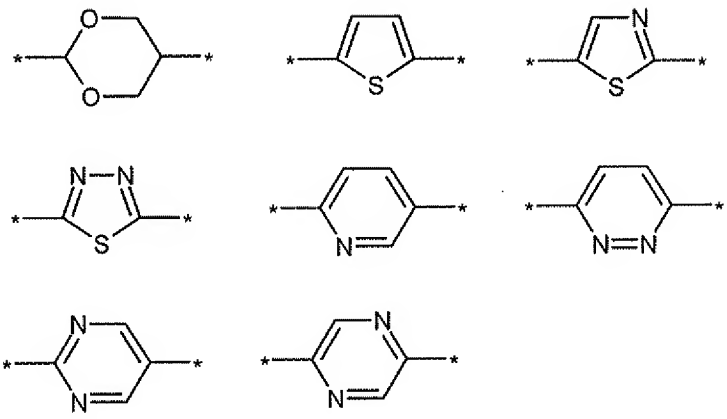


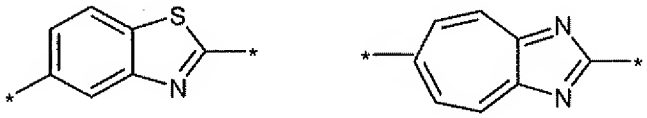
(II-c-6)

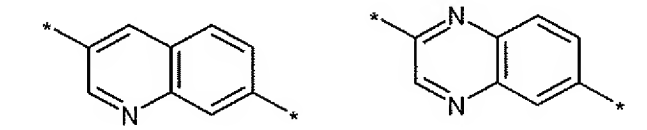
wherein

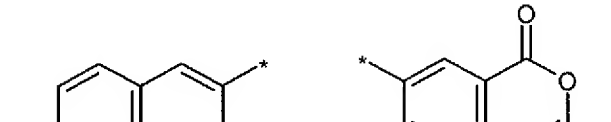
X^1, X^2 and X^3 are substituted or unsubstituted structures selected independently from the group consisting of

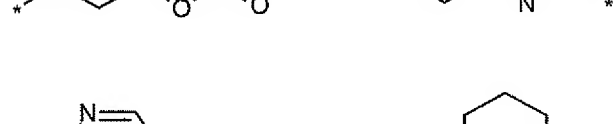


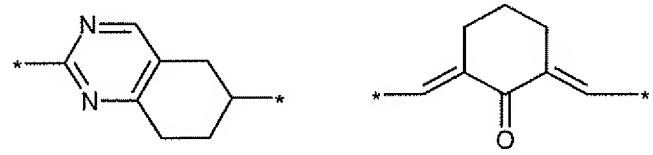




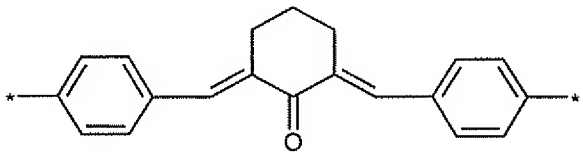




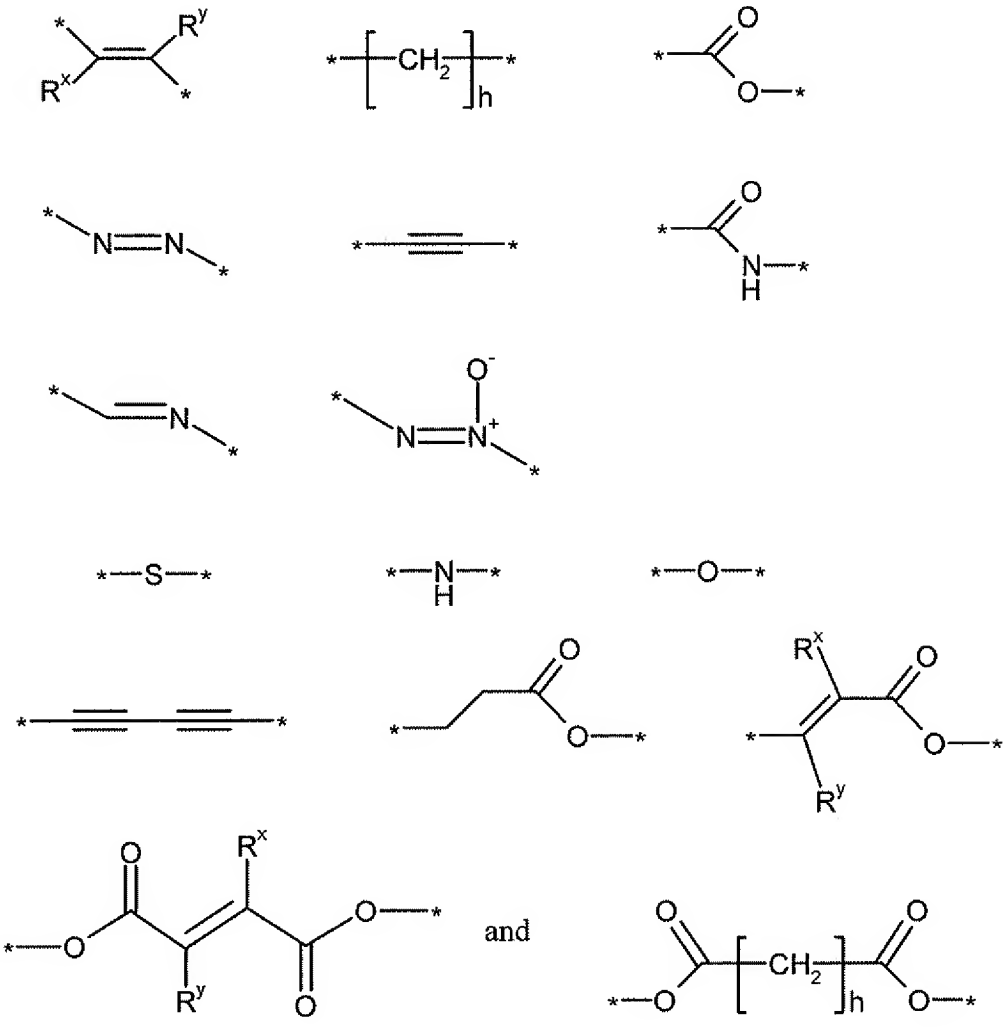




and



Z^1 and Z^2 are structures selected independently from the group consisting of



wherein

R^x and R^y are each, independently of one another, H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an

aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, NO_2, a carboxyl group or a hydroxy group,

h is an integer from 1 to 10,

w is an integer from 1 to 5,

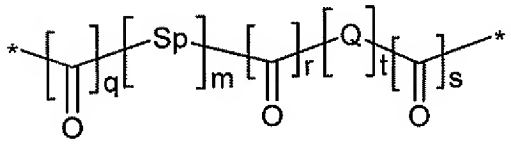
x, y and z are each, independently of one another, 0 or 1, and

n an integer from 1 to 8, where when n is 1, the group of the formula (II-a) or (II-b) bears a terminal group F' at the linkage points denoted by *,

wherein

F' is substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group,

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r and s are identical or different and each are 0 or 1, with the proviso that when r is 1, s is 0 and vice versa or both are optionally 0,

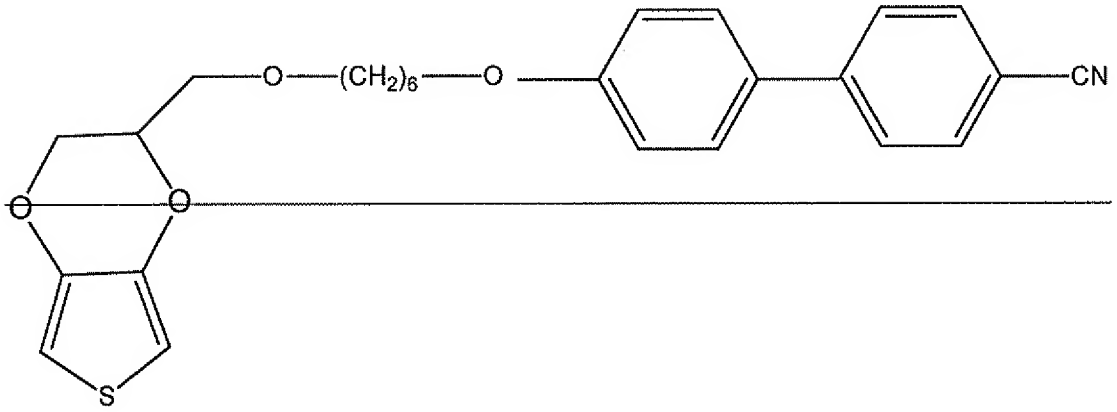
t is 0 or 1,

Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-heteroarylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

m is 0 or 1,

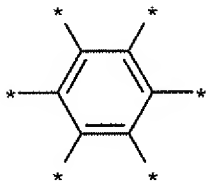
Q is O, S or NH

~~with the proviso that said polythiophenes is not~~

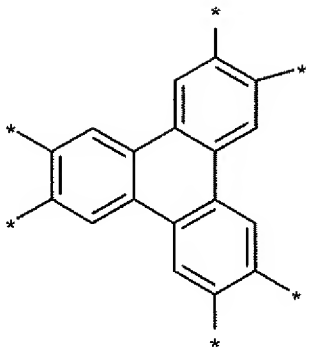


47. (Previously presented) The 3,4-Alkylenedioxythiophenes of claim 46, wherein

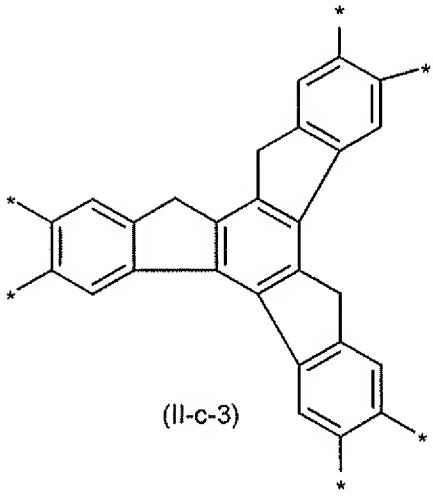
M is an n-functional group selected from the group consisting of the formulae (II-c-1) to (II-c-6),



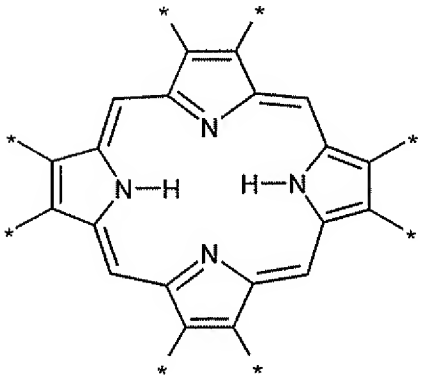
(II-c-1)



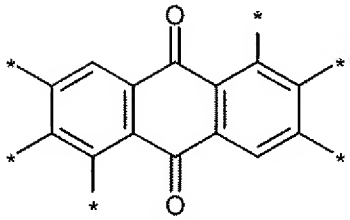
(II-c-2)



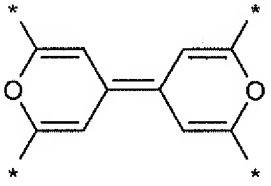
(II-c-3)



(II-c-4)



(II-c-5)



(II-c-6)

wherein

n is at most 4, 6 or 8,

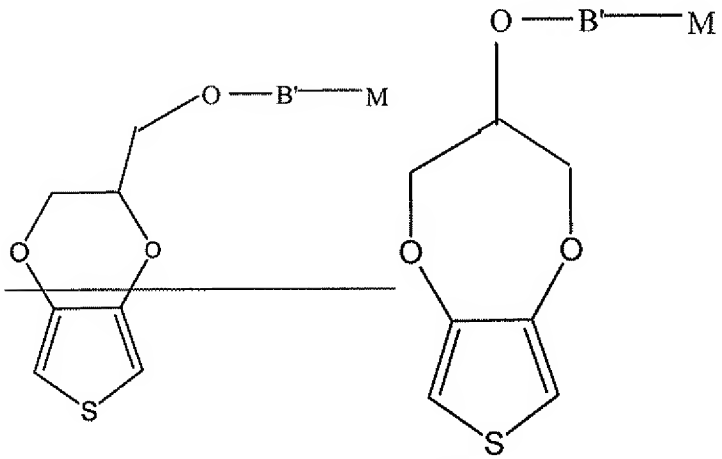
and wherein when n is an integer below 4, 6 or 8, M is selected from the group consisting of the formulae (II-c-1) to (II-c-6) bearing a terminal group F' on the remaining 4 – n, 6 – n or 8 – n linkage points denoted by *,

wherein

F' is H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-

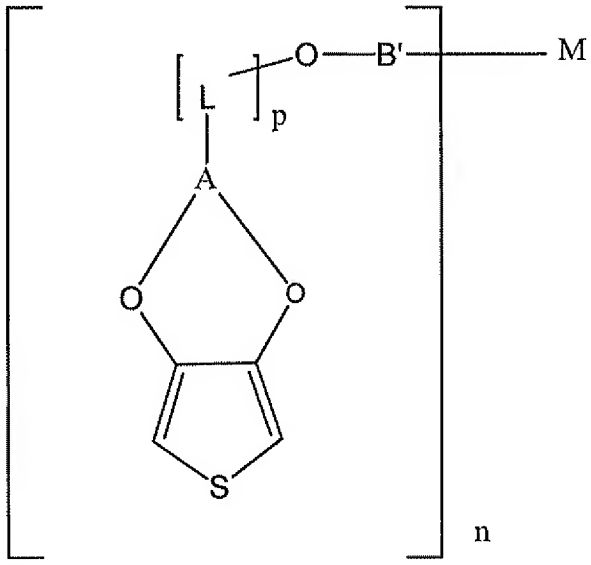
alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group.

48. (Currently Amended) The 3,4-Alkylenedioxythiophene of claim 46, having the structure of the ~~formulae (I-a) or~~ formula (I-b),



(I-a) (I-b)

49. (Previously presented) A 3,4-Alkylenedioxythiophene of the formula (I),



(I)

wherein

A is a C_1-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

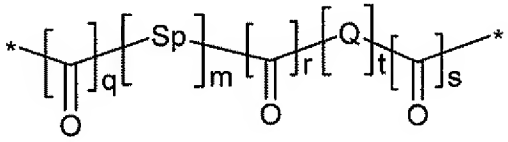
L is a methylene group,

p is 0 or an integer from 1 to 6,

M is an n-functional steroid radical or a derivative of a steroid radical,

n is 1 and

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r and s are each independently 0 or 1, with the proviso that when r is 1, s is 0 and vice versa or both are optionally 0,

t is 0 or 1,

Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-hetero-arylene groups in which from one to three heteroatoms selected from the group

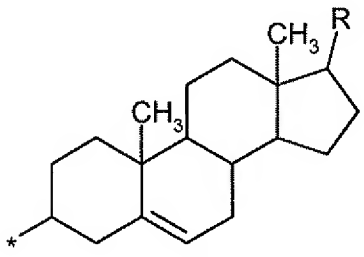
consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

m is 0 or 1,

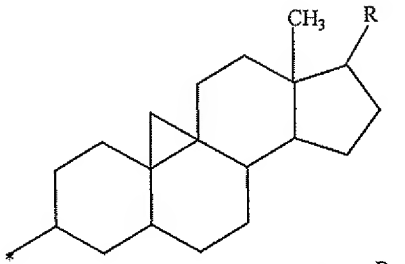
Q is O, S or NH.

50. (Previously presented) The 3,4-Alkylenedioxythiophene as claimed in claim 49, wherein

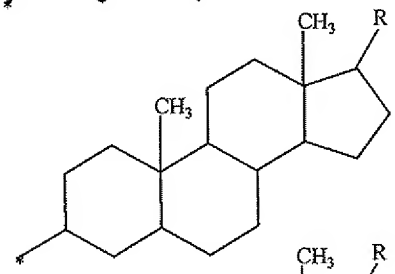
M is an n-functional cholesteryl radical or a derivative of the cholesteryl radical of the formula (III-a)-(III-e),



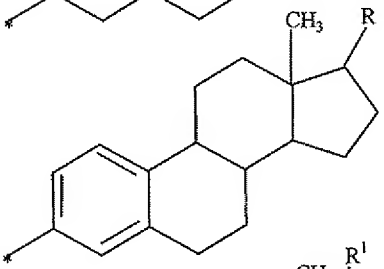
(III-a)



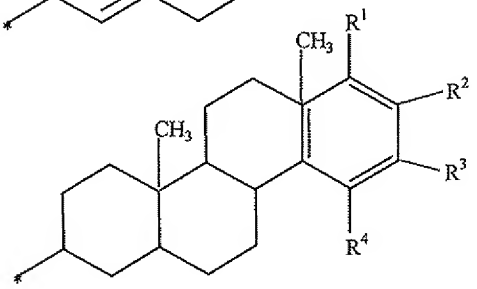
(III-b)



(III-c)



(III-d)



(III-e)

wherein R is H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group, and

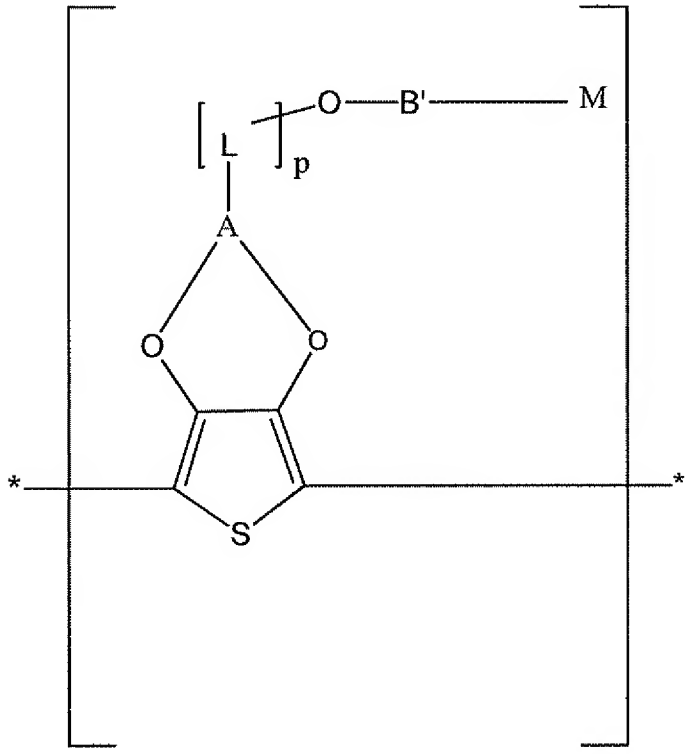
R^1, R^2, R^3 and R^4 can, independently of one another, be as defined above for R.

51. (Previously presented) A process for preparing a polythiophene comprising polymerizing the 3,4-alkylenedioxythiophene as claimed in claim 46.

52. (Currently Amended) The process of Claim 51 wherein ~~a mixture of~~ two or more compounds of Formula 1 are mixed together to form a mixture and the mixture is polymerized.

53. (Previously presented) A process for preparing electrical or electronic components, light-emitting components, for antistatic coating, in optoelectronics or in solar energy technology comprising incorporating the polythiophene according to claim 46.

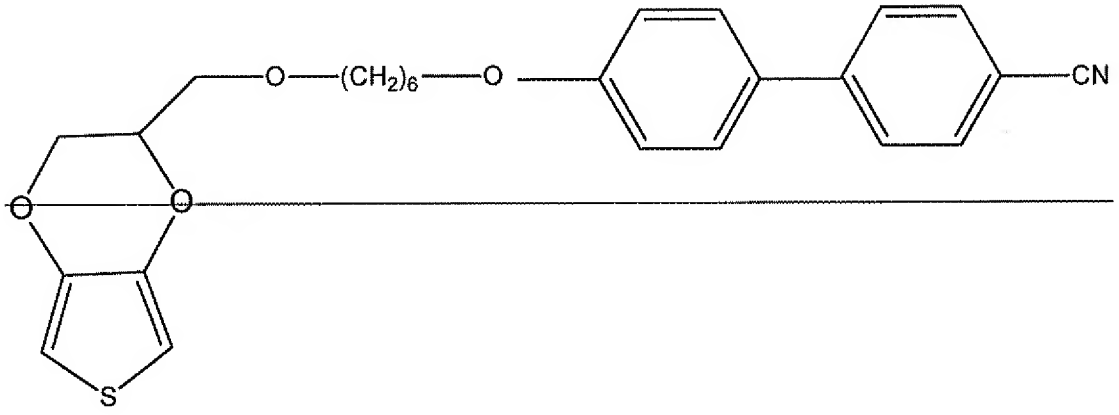
54. (Currently Amended) A polythiophene which comprise recurring units of the formula (IV),



(IV)

produced according to the process of claim 51

~~with the proviso that said polythiophenes is not~~



55. (Previously presented) A process for preparing electrical or electronic components, light-emitting components, for antistatic coating, in optoelectronics or in solar energy technology comprising incorporating the polythiophene of Claim 54.

56. (Previously presented) A process for preparing conductive layers comprising incorporating the polythiophene according to Claim 54.

57. (Previously presented) The process according to claim 52, which further comprises heating the layer at a temperature form 80^0C to 300^0C.

58. (Previously presented) The process according to claim 56, which further comprises heating the layer at a temperature form 80^0C to 300^0C.

59. (Cancelled)

60. (Currently amended) A process for preparing the polythiophene as claimed in ~~claim 44,~~ claim 54, comprising oxidatively polymerizing electrochemically compounds of the formula (I).

61. (Cancelled)

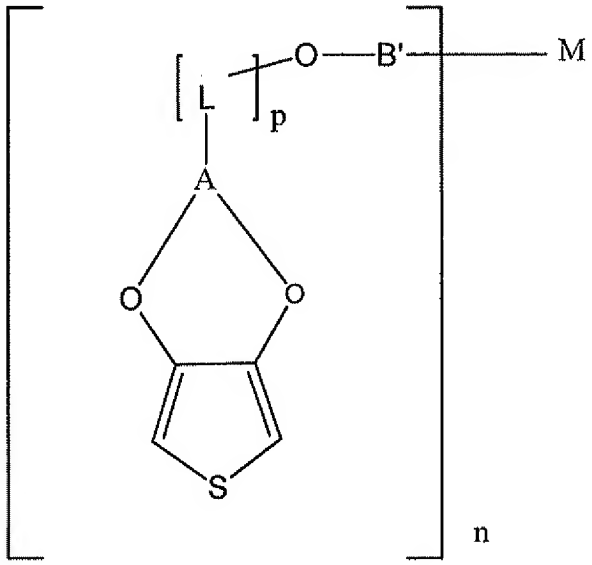
62. (Previously presented) The polythiophene of claim 59, wherein they are cationically and electrically conductive and contain bound anions as counterions to balance the positive charge.

63. (Previously presented) The polythiophene of Claim 61, wherein the counterions are polyanions of polymeric carboxylic acids or polymeric sulphonic acids.

64. (Currently Amended) The polythiophene according to ~~claim 44,~~ claim 54, wherein they are uncharged and semiconducting.

65. (Previously presented) Process for the preparing polythiophene as claimed in claim 46 which comprises oxidatively polymerizing electrochemically compounds of the formula (I).

66. (Currently Amended) A 3,4-Alkylenedioxythiophenes of the formula (I),



(I)

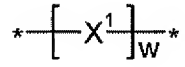
wherein

A is a C_1-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

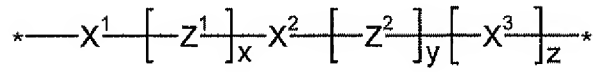
L is a methylene group,

p is 0,

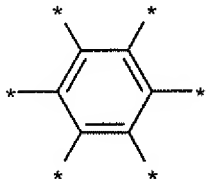
M is an n-functional group of the formula (II-a), (II-b) or (II-c-1) to (II-c-6),



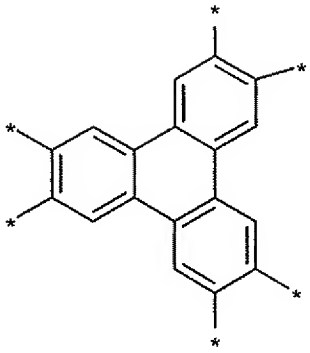
(II-a)



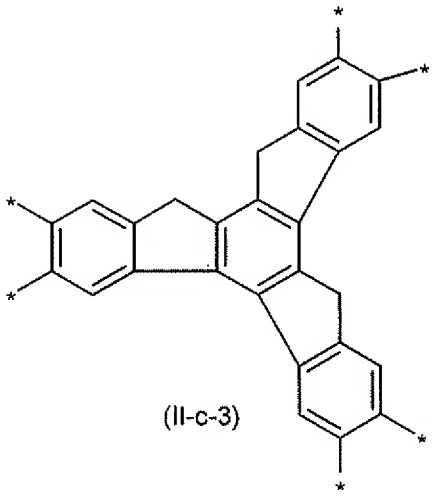
(II-b)



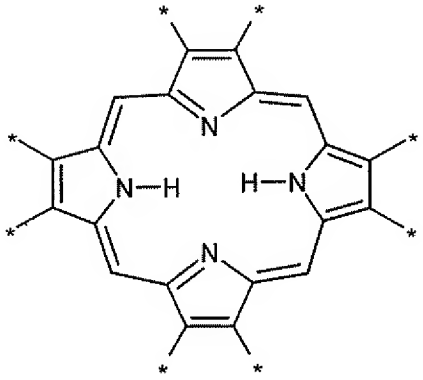
(II-c-1)



(II-c-2)



(II-c-3)



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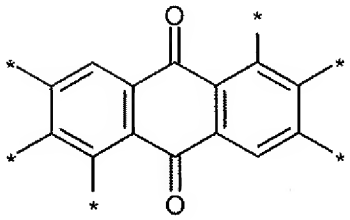
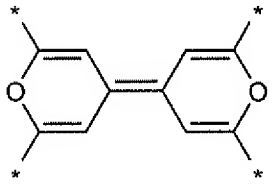


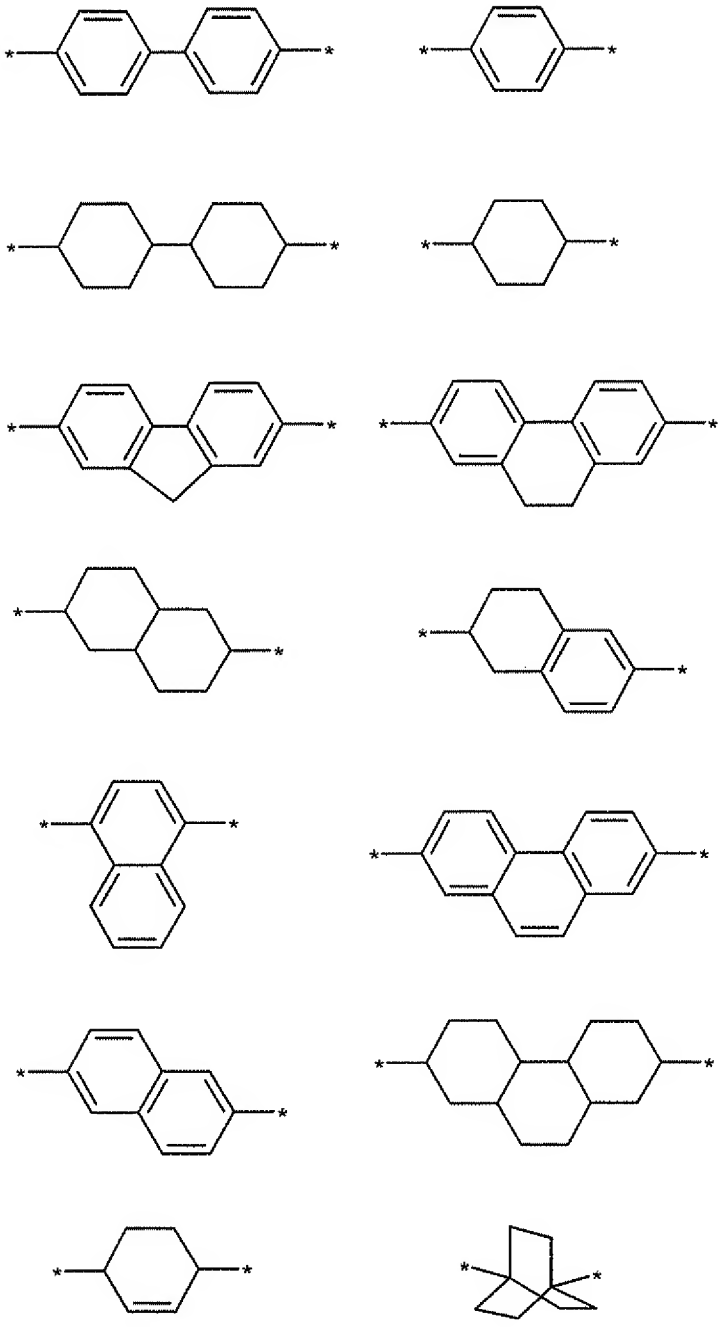
(II-c-5)

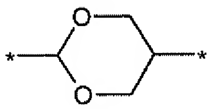
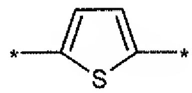
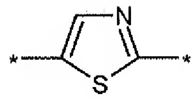
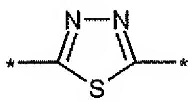
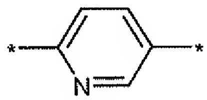
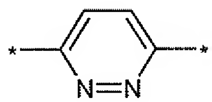
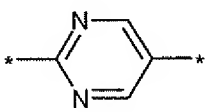
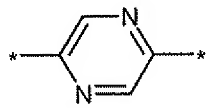
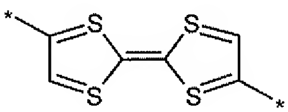
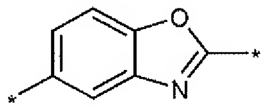
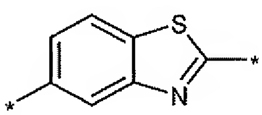
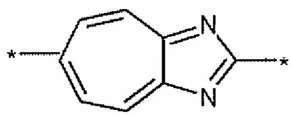
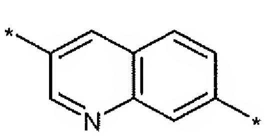
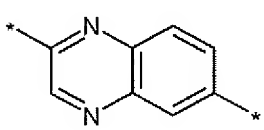
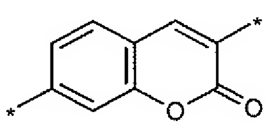
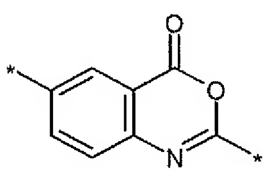
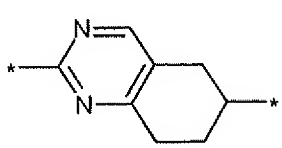
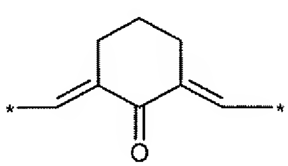


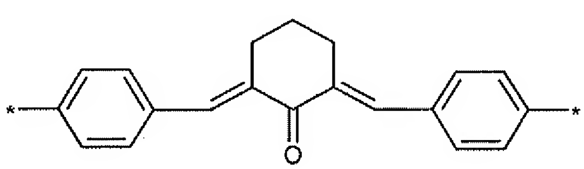
(II-c-6)

wherein

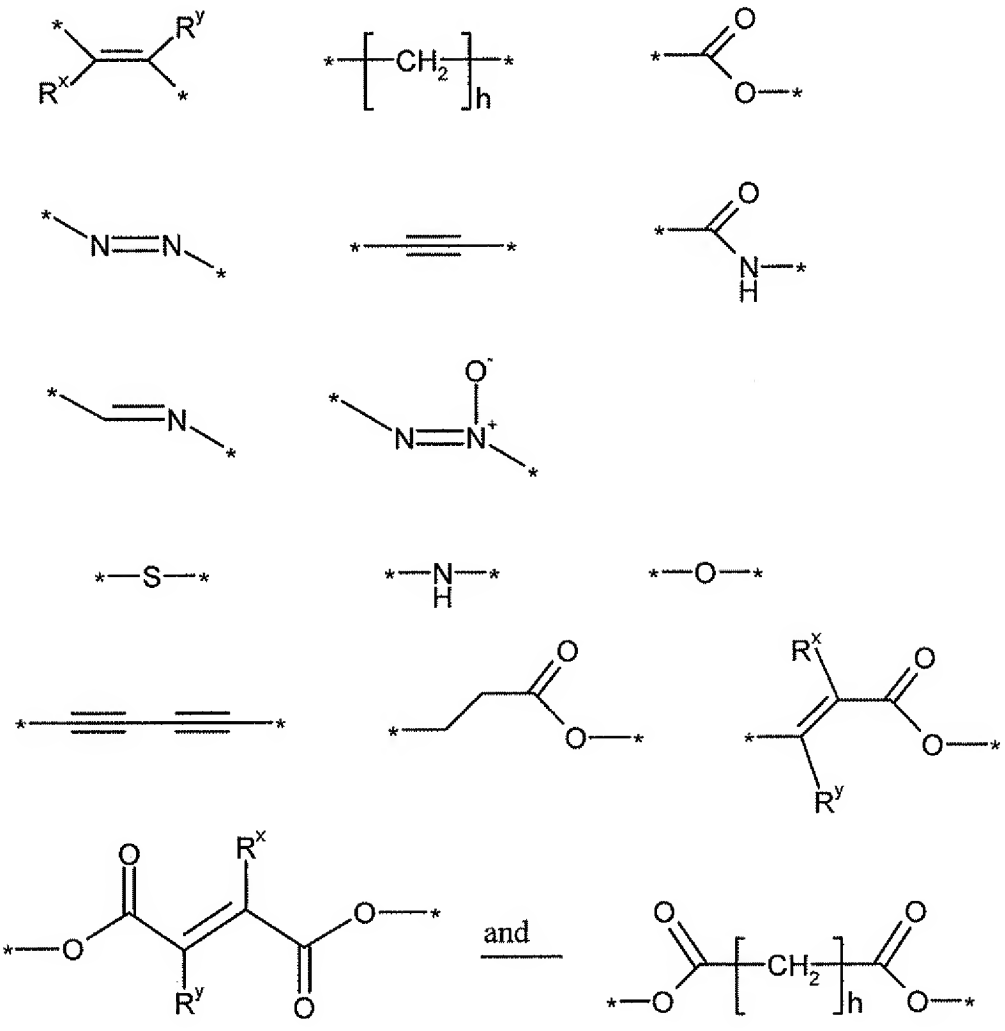
X^1, X^2 and X^3 are substituted or unsubstituted structures selected independently from the group consisting of



and 

Z^1 and Z^2 are structures selected independently from the group consisting of



wherein

R^x and R^y are each, independently of one another, H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an

aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, NO_2, a carboxyl group or a hydroxy group,

h is an integer from 1 to 10,

w is an integer from 1 to 5,

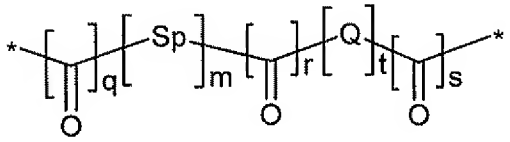
x, y and z are each, independently of one another, 0 or 1, and

n an integer from 1 to 8, where when n is 1, the group of the formula (II-a) or (II-b) bears a terminal group F' at the linkage points denoted by *,

wherein

F' is substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group,

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r and s are identical or different and each are 0 or 1, with the proviso that when r is 1, s is 0 and vice versa or both are optionally 0,

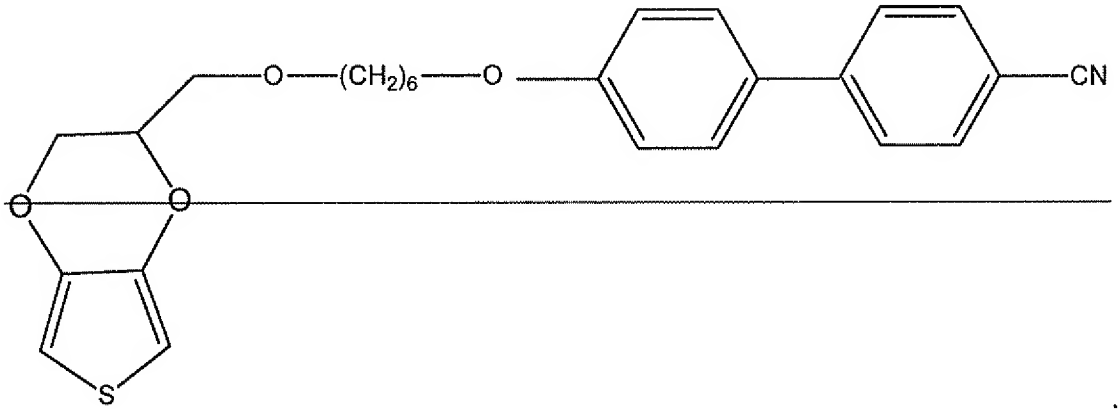
t is 0 or 1,

Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-heteroarylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

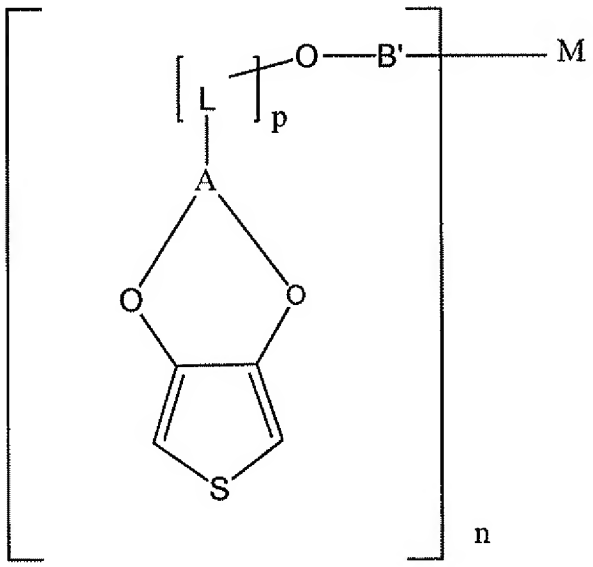
m is 0 or 1,

Q is O, S or NH

~~with the proviso that said polythiophenes is not~~



67. (Currently Amended) A 3,4-Alkylenedioxythiophenes of the formula (I),



(I)

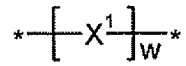
wherein

A is a C_1-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

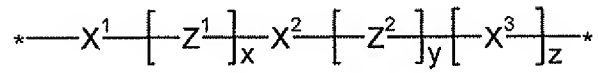
L is a methylene group,

p is 0 or an integer from 1 to 6,

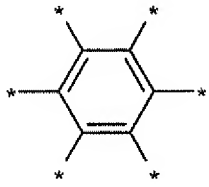
M is an n-functional group of the formula (II-a), (II-b) or (II-c-1) to (II-c-6),



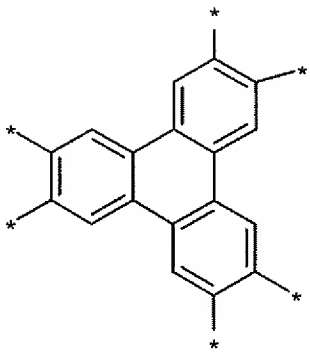
(II-a)



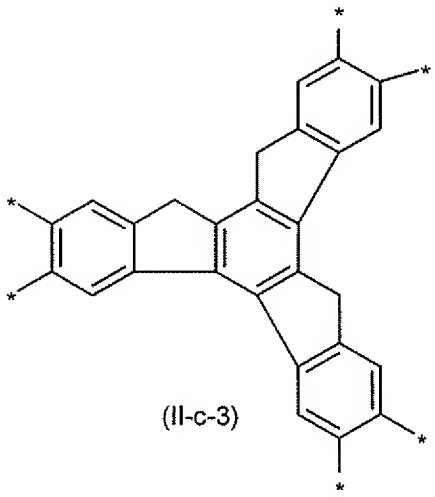
(II-b)



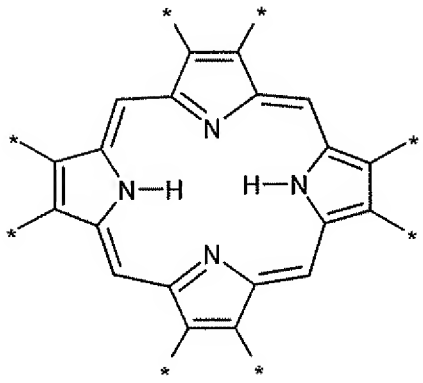
(II-c-1)



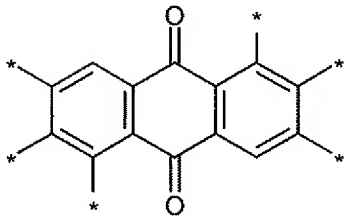
(II-c-2)



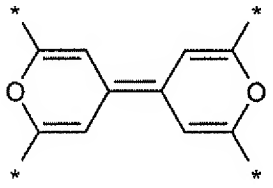
(II-c-3)



(II-c-4)



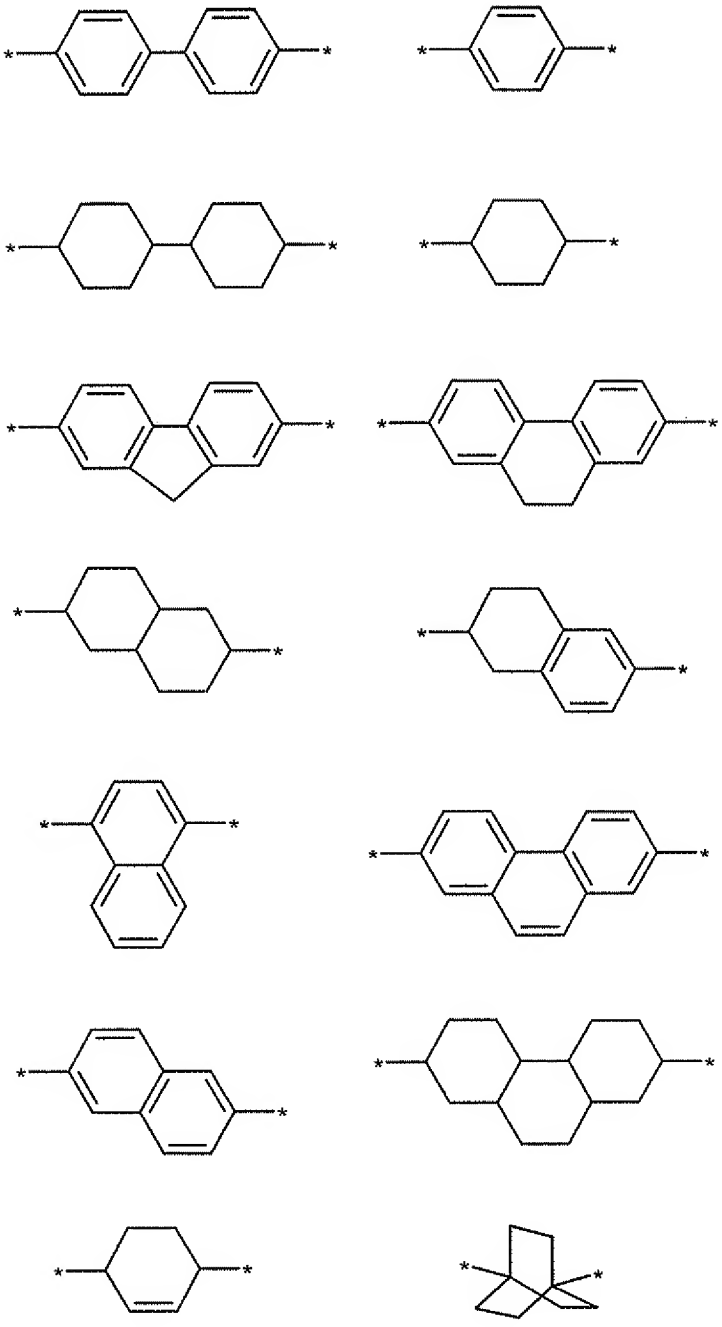
(II-c-5)

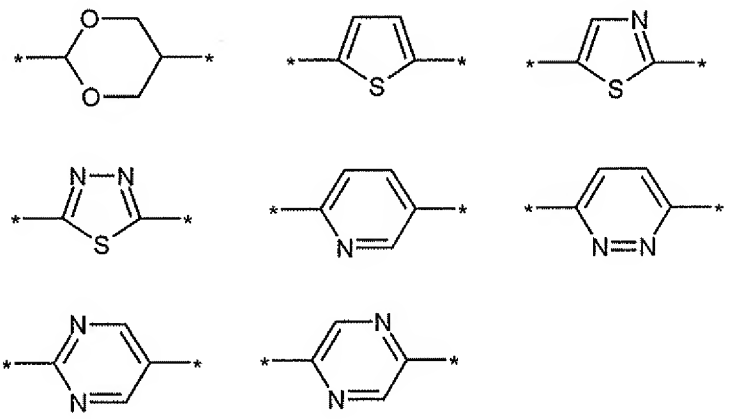


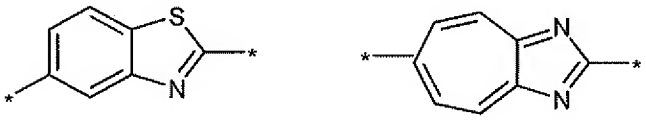
(II-c-6)

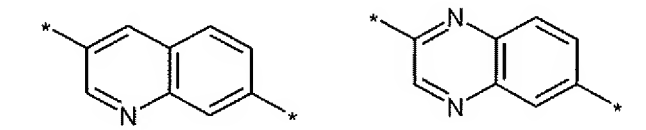
wherein

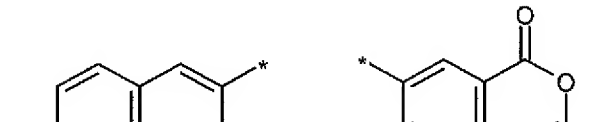
X^1, X^2 and X^3 are substituted or unsubstituted structures selected independently from the group consisting of

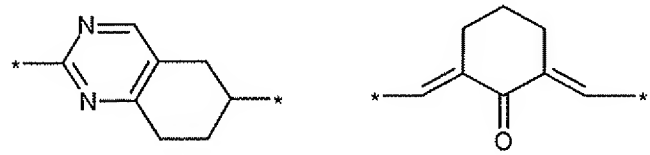




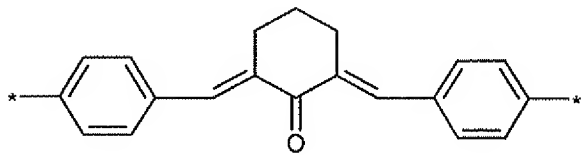




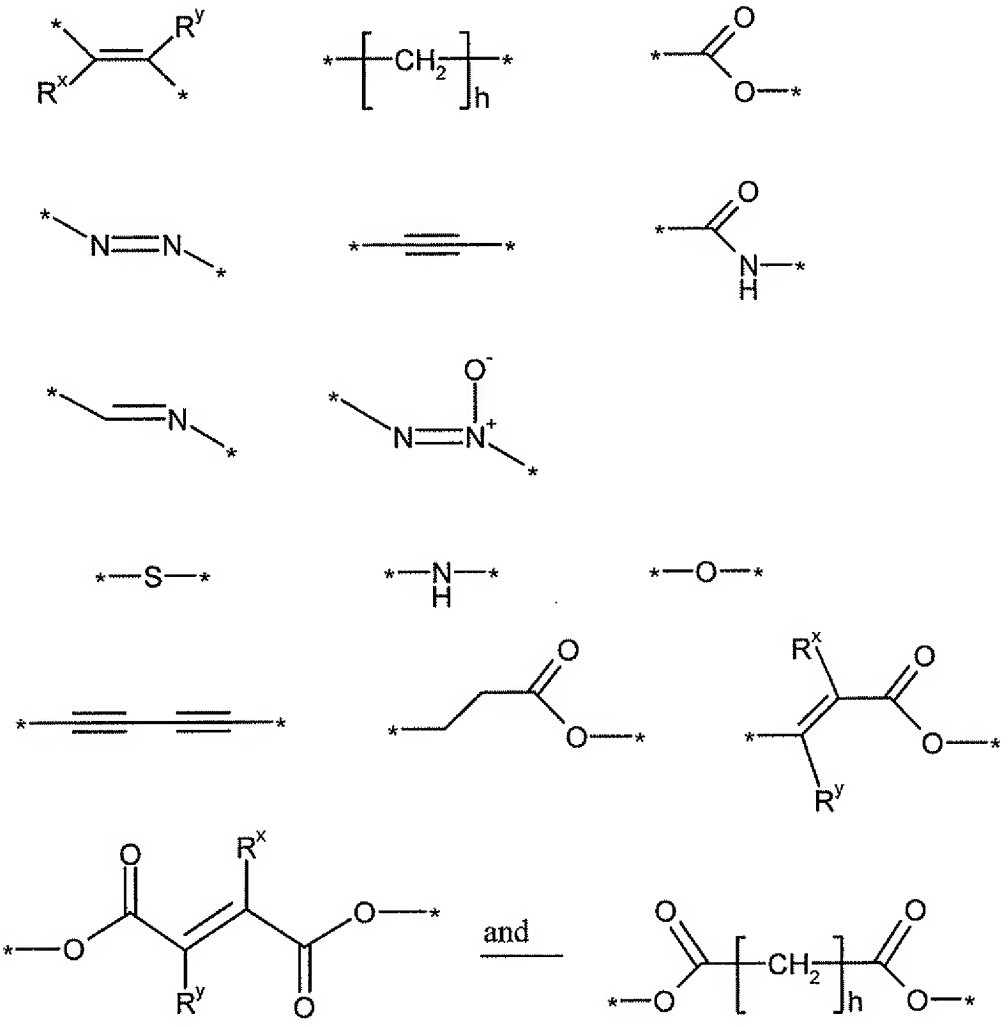




and



Z^1 and Z^2 are structures selected independently from the group consisting of



wherein

R^x and R^y are each, independently of one another, H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an

aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, NO_2, a carboxyl group or a hydroxy group,

h is an integer from 1 to 10,

w is an integer from 1 to 5,

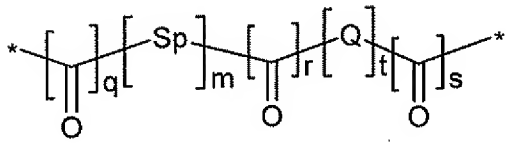
x, y and z are each, independently of one another, 0 or 1, and

n an integer from 1 to 8, where when n is 1, the group of the formula (II-a) or (II-b) bears a terminal group F' at the linkage points denoted by *,

wherein

F' is substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group,

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r is 1,

s is 0,

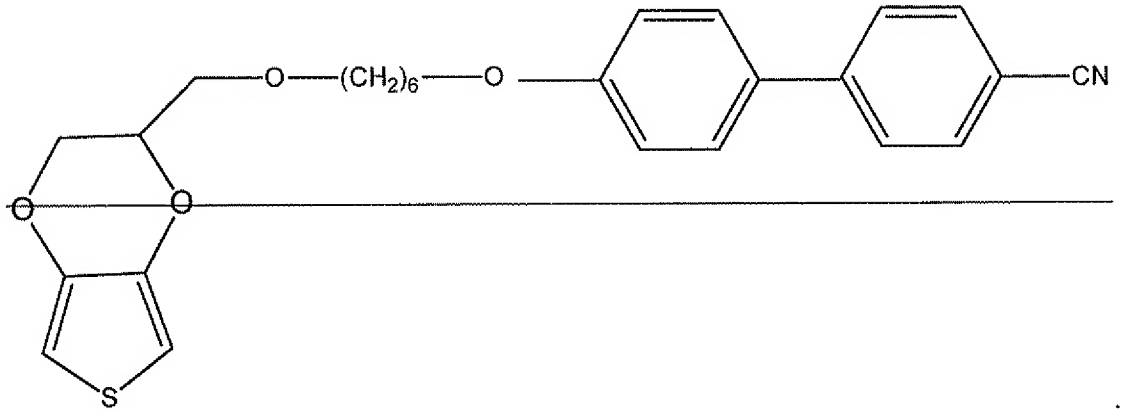
t is 0 or 1,

Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-heteroarylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

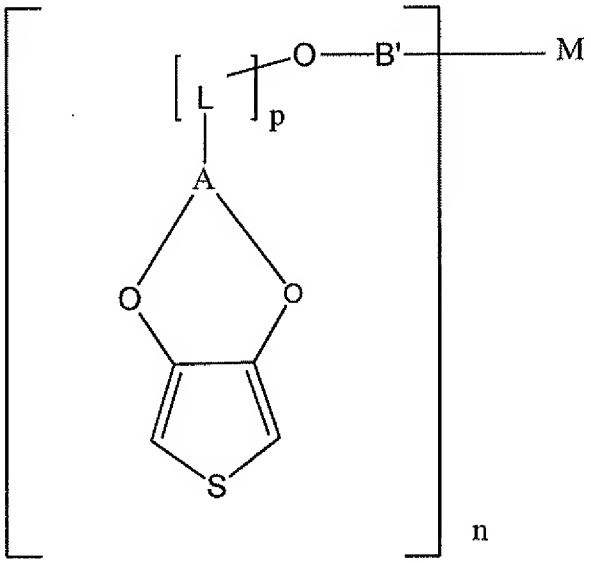
m is 0 or 1,

Q is O, S or NH

~~with the proviso that said polythiophenes is not~~



68. (Currently amended) A 3,4-Alkylenedioxythiophenes of the formula (I),



(I)

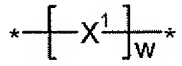
wherein

A is a C_1-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

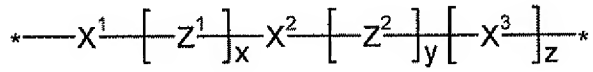
L is a methylene group,

p is 0 or an integer from 1 to 6,

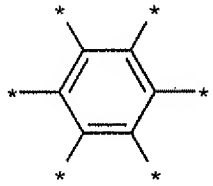
M is an n-functional group of the formula (II-a), (II-b) or (II-c-1) to (II-c-6),



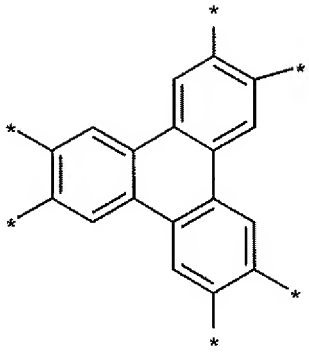
(II-a)



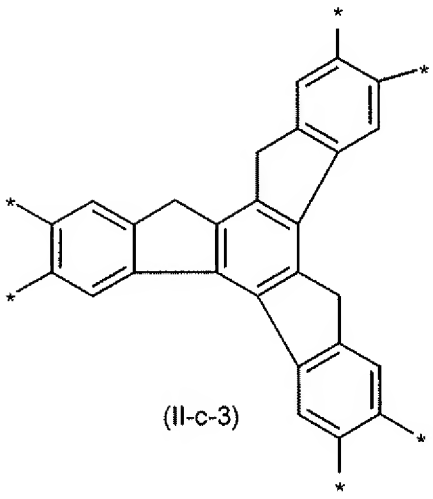
(II-b)



(II-c-1)



(II-c-2)



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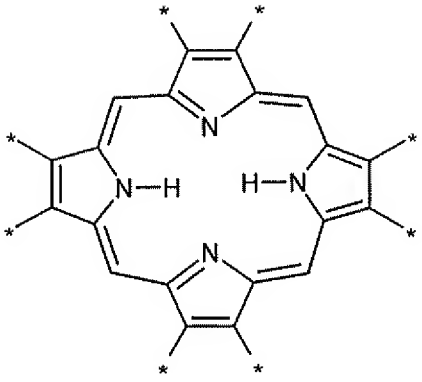
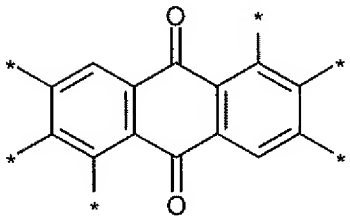
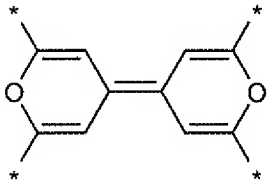


(II-c-4)



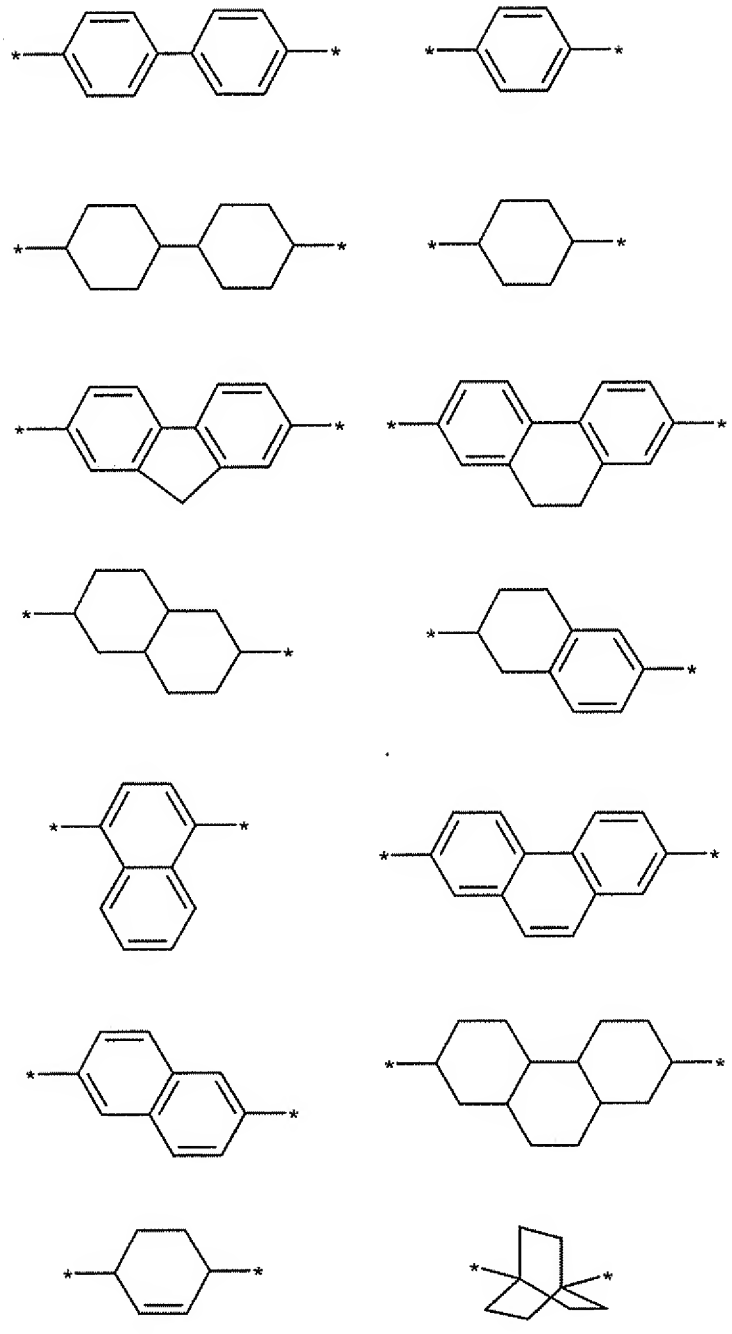
(II-c-5)

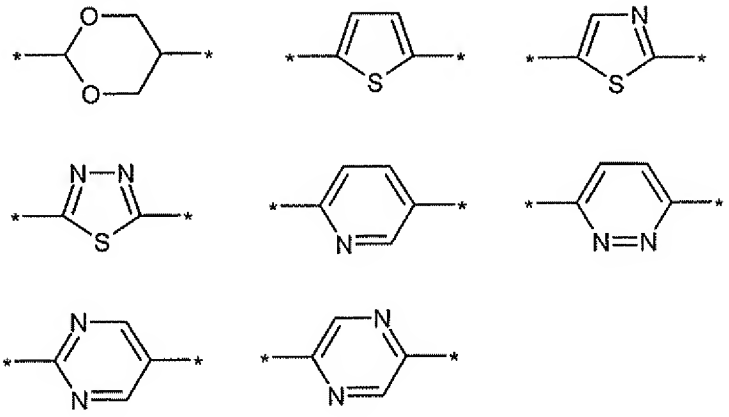


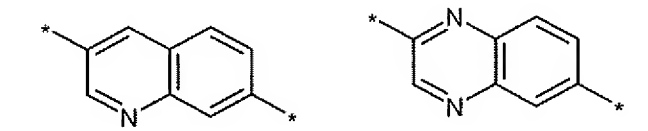
(II-c-6)

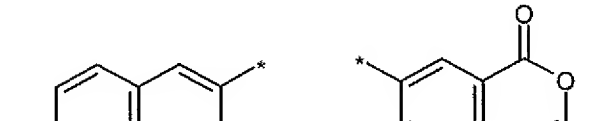
wherein

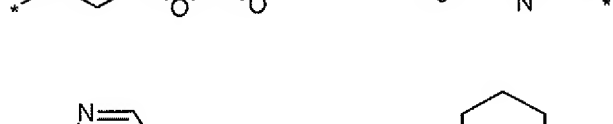
X^1, X^2 and X^3 are substituted or unsubstituted structures selected independently from the group consisting of

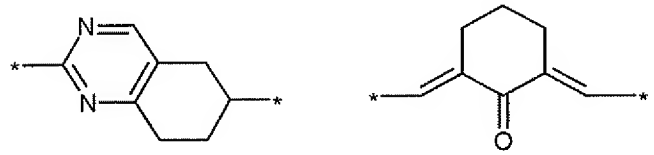


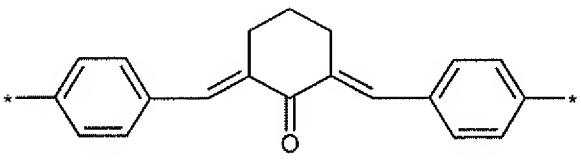






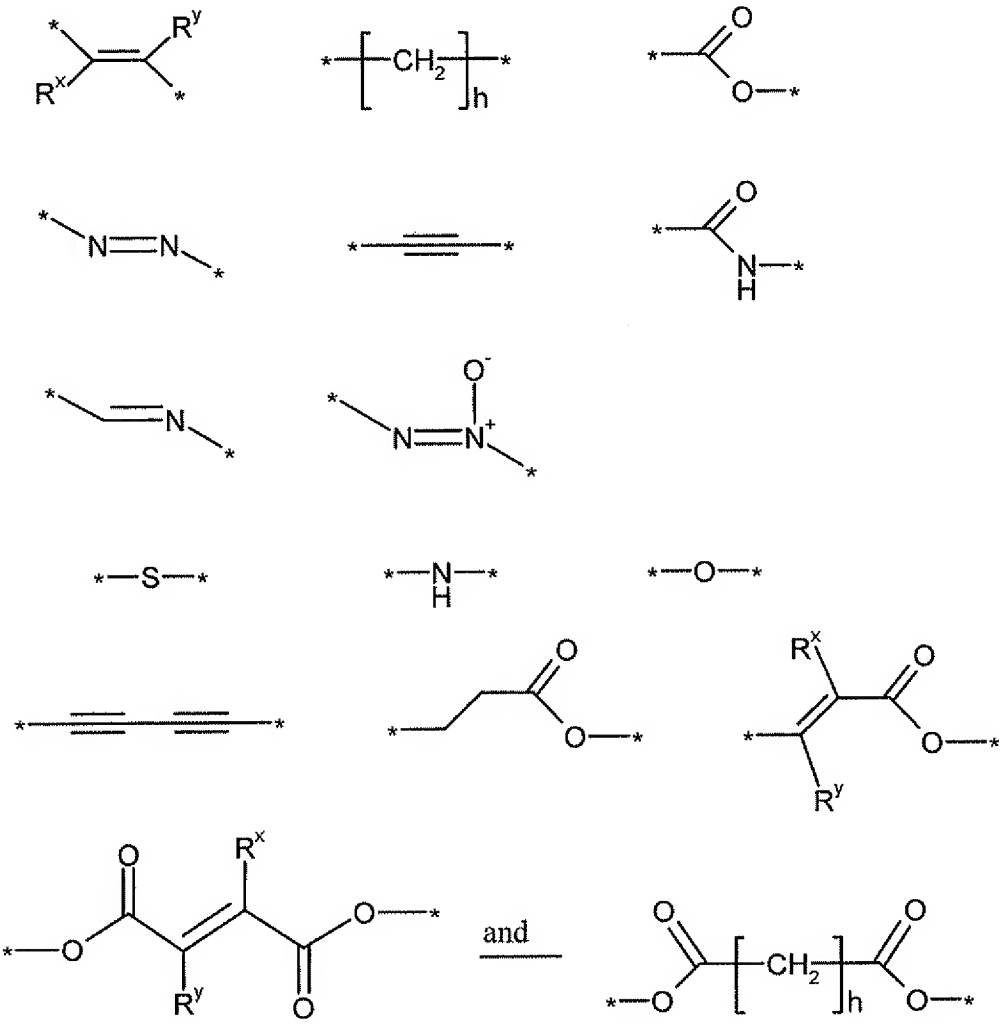






and

Z^1 and Z^2 are structures selected independently from the group consisting of



and

wherein

R^x and R^y are each, independently of one another, H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an

aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, NO_2, a carboxyl group or a hydroxy group,

h is an integer from 1 to 10,

w is an integer from 1 to 5,

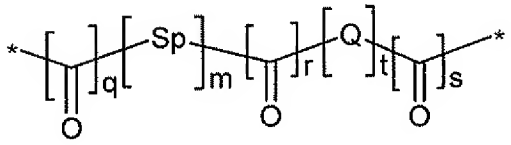
x, y and z are each, independently of one another, 0 or 1, and

n an integer from 1 to 8, where when n is 1, the group of the formula (II-a) or (II-b) bears a terminal group F' at the linkage points denoted by *,

wherein

F' is substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, thiocyano, isocyano, isothiocyano, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group,

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r and s are identical or different and each are 0 or 1, with the proviso that when r is 1, s is 0 and vice versa or both are optionally 0,

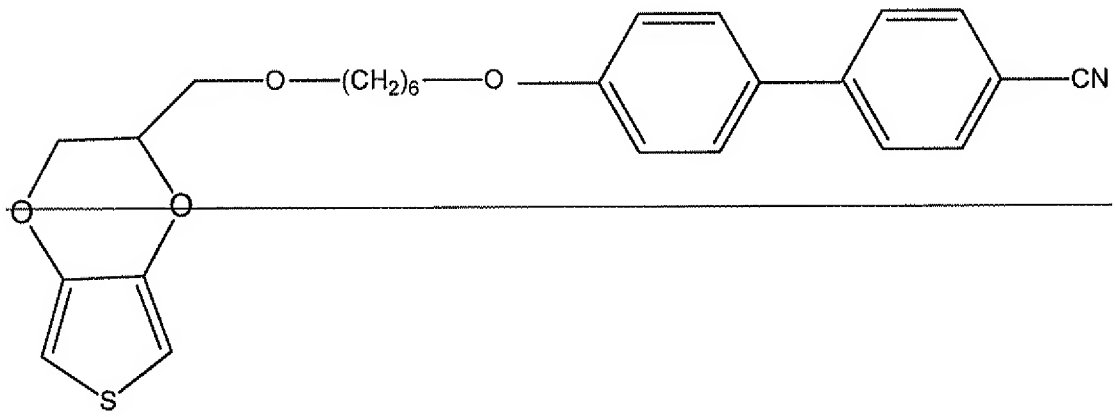
t is 0 or 1,

Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-heteroarylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

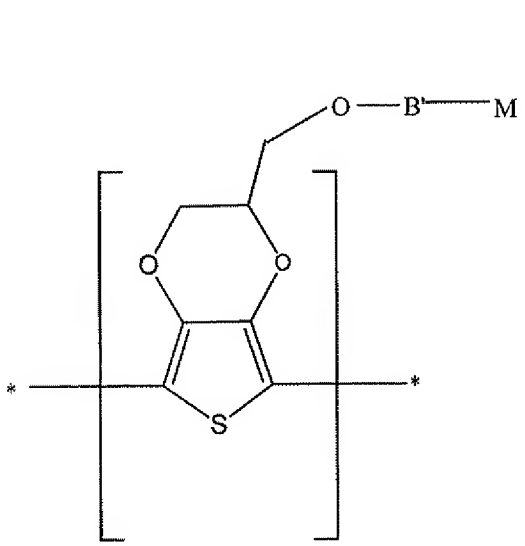
m is 0 or 1,

Q is O, S or NH

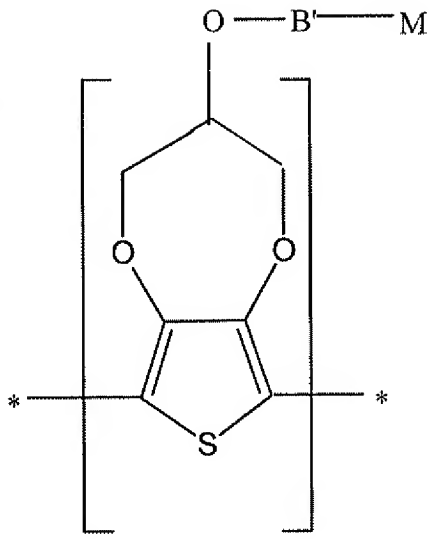
~~with the proviso that said polythiophenes is not~~



69. (New) A polythiophene which comprise recurring units of the the formulae (IV-a) and (IV-b),



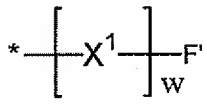
(IV-a)



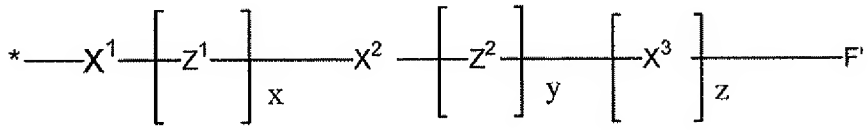
(IV-b)

wherein

M is an n-functional group of the formula (II-a) or (II-b),



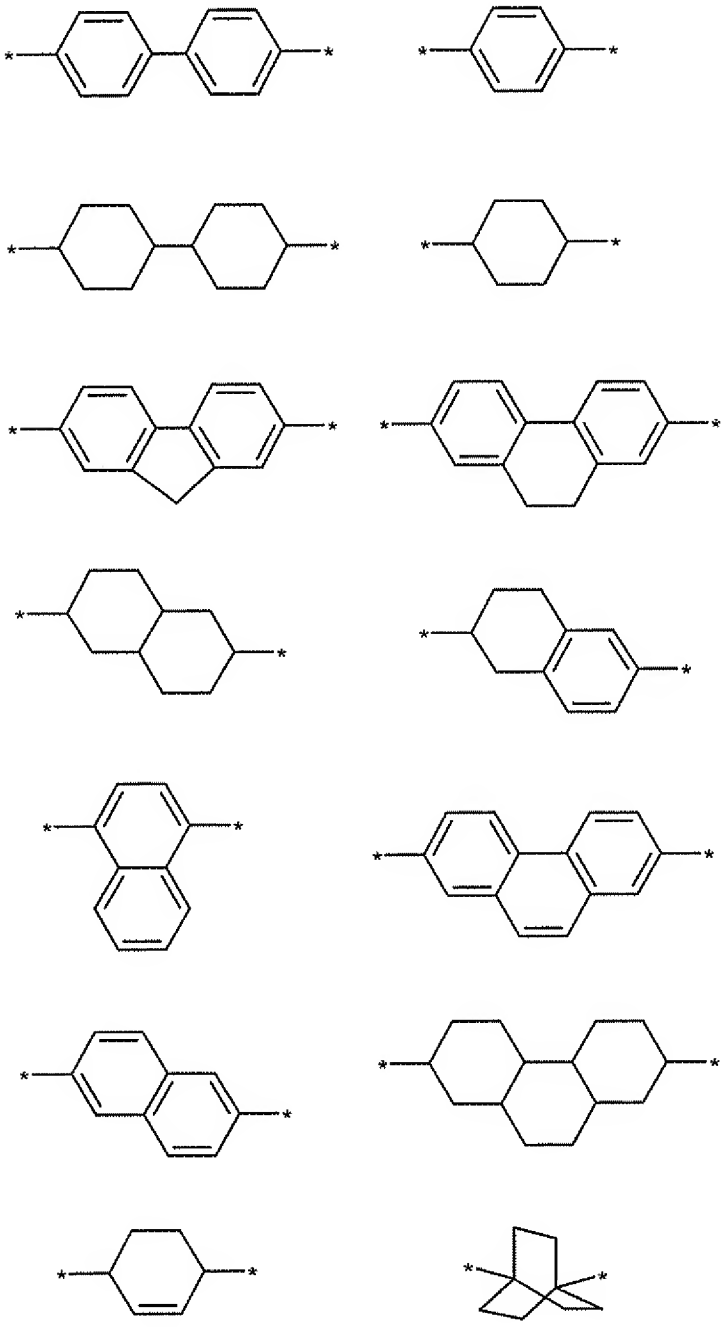
(II-a)

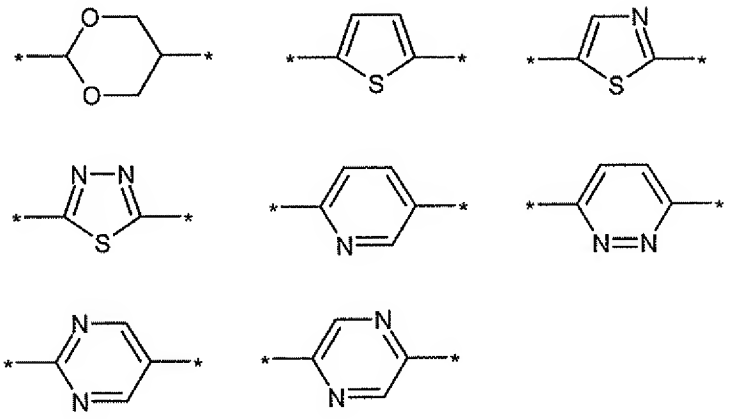


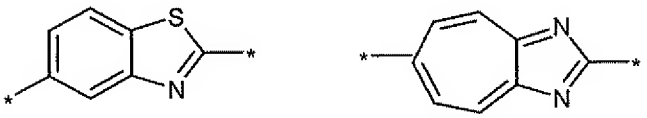
(II-b)

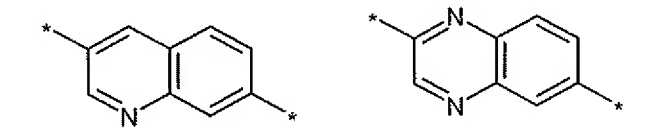
wherein

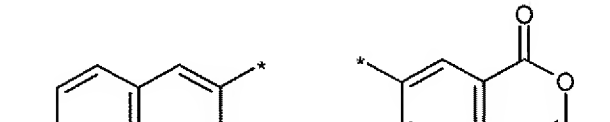
X^1, X^2 and X^3 are substituted or unsubstituted structures selected independently from the group consisting of

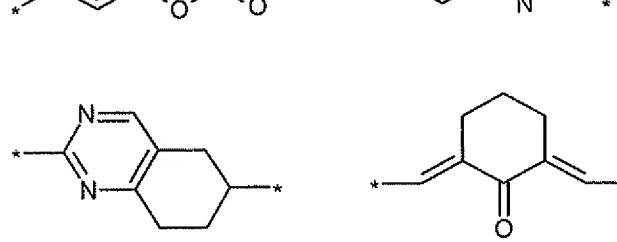






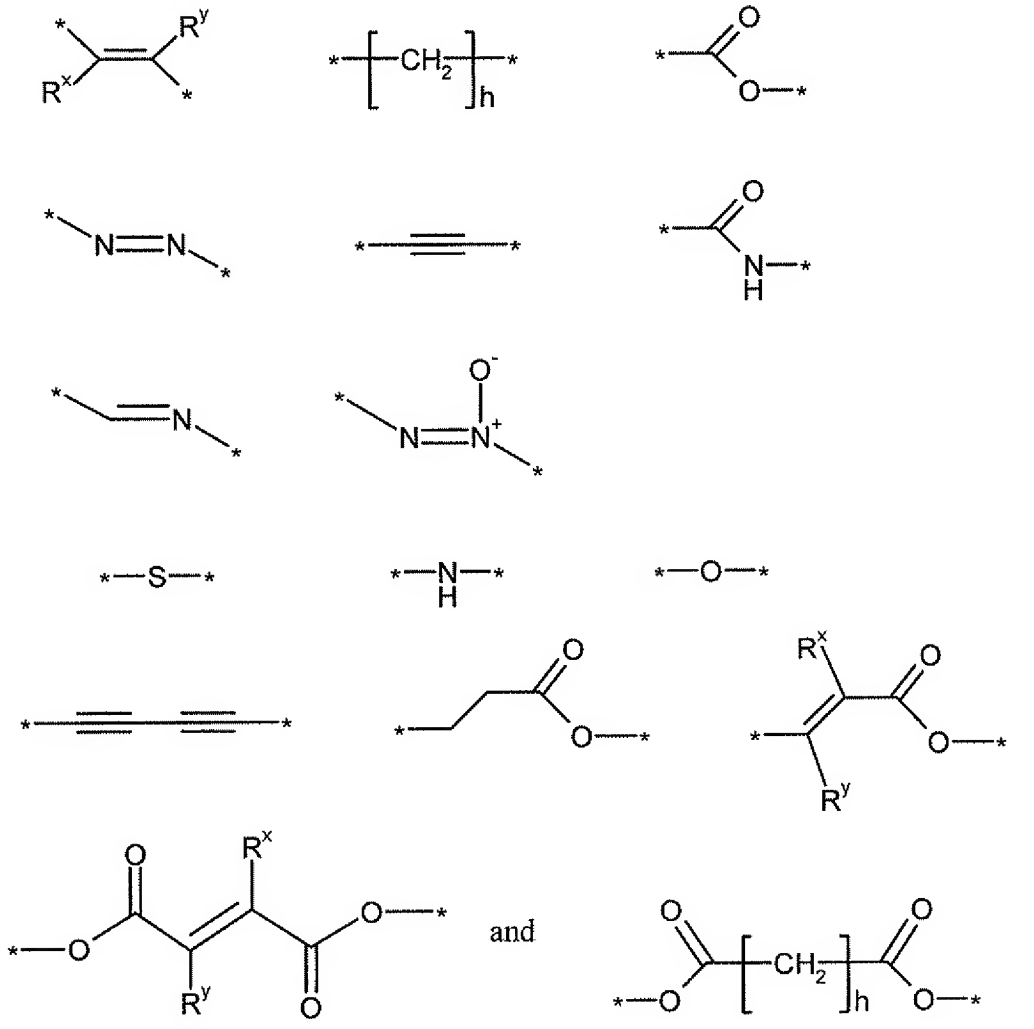






and

Z^1 and Z^2 are structures selected independently from the group consisting of



wherein

R^x and R^y are each, independently of one another, H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, NO_2, a carboxyl group or a hydroxy group,

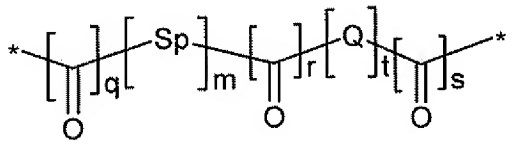
h is an integer from 1 to 10,

w	is an integer from 1 to 5,
x, y and z	are each, independently of one another, 0 or 1, and
n	is 1 or 2, where when n is 1, the group of the formula (II-a) or (II-b) bears a terminal group F at the linkage points denoted by *,

wherein

F' is substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group,

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r and s are each 0 or 1, with the proviso that when r is 1, s is 0 and vice versa or both are optionally 0,

t is 0 or 1,

Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-hetero-arylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

m is 0 or 1,

Q is O, S or NH.